CMSY-199
Introduction to Java
Assignment 1

Read chapter 1 and sections 2.1-2.2 of Java How To Program, 8th ed.

Section 1.   Fill in the blanks in each of the following statements:

1. Although Java is an _____ programming language, the internal details of objects are often developed using structured programming techniques.

2. Java Standard Edition (Java SE) is used for a wide variety of applications while _____ is used for networking and web-based applications and _____ is used for embedded devices like cell phones and PDAs.

3. Today's personal computers can perform _____ of calculations per second.

4. Two proven methodologies for reducing software-development costs are _____ and _____.

5. List the six logical units of virtually every computer.

   _____

6. _____ is the simultaneous operation of many jobs that are competing for a computer's resources.

7. The _____ was released in 1981 and quickly legitimized personal computing in business, industry, and government organizations.

8. Java applications can usually be written to execute _____ on every major type of computer.

9. A program which converts a high-level language into machine language is called a _____.

10. A program which executes a high-level language directly is called an _____.

Section 2.   Answer True or False to each of the following statements:

_____ 1.   Sun Microsystems formally introduced Java at an industry conference in 1995.

_____ 2.   Java was originally called Maple after a maple tree outside its inventors window at Sun.

_____ 3.   Java programs consist of pieces called subroutines.

_____ 4.   The rich collection of existing classes in the Java class libraries is also known as the Java API (Application Programming Interfaces).

_____ 5.   There are really two aspects to learning Java - the language itself and the class libraries.

_____ 6.   An important capability of C++ is multitasking which allows programmers to specify that many activities in a program are to occur simultaneously.

_____ 7.   Parallel programming is accomplished in Java using a technique called multi-threading.

_____ 8.   Ada Lovelace is credited with writing the world's first computer program in the 1800s.

_____ 9.   Apple Computer developed the Fortran computer language in 1977.

_____ 10.   Microsoft's .NET platform provides developers with the capability to create and run applications on computers that are distributed on the internet.

Section 3.   Match each language with its inventor:

_____ 1. C++

_____ 2. Ada

_____ 3. COBOL

_____ 4. BASIC

_____ 5. Visual Basic, Visual C++, C#

_____ 6. Pascal

_____ 7. Java

_____ 8. Fortran

_____ 9. UML

_____ 10. C

(a) James Gosling

(b) Nicklaus Wirth

(c) Computer manufacturers, U.S. Government, and Industrial Computer Users (Grace Hopper)

(d) Microsoft Corporation

(e) Dennis Ritchie

(f) IBM Corporation (John Backus)

(g) Bjarne Stroustrup

(h) Grady Booch, James Rumbaugh, and Ivar Jacobson

(i) Dartmouth College (John Kemeny and Thomas Kurtz)

(j) U.S. Department of Defense

Section 4. Circle the letter of the best answer for each question:

1. Which of the following is not a step in creating and executing a Java application?

    (a)   Edit
    (b)   Preprocess
    (c)   Compile
    (d)   Load
    (e)   Verify
    (f)   Execute

2. What command would you use to compile a program called called Welcome.java?

    (a)   javac Welcome
    (b)   javac Welcome.java
    (c)   java Welcome
    (d)   java Welcome.class

3. What command would you use to execute an application called called Welcome?

    (a)   javac Welcome
    (b)   javac Welcome.java
    (c)   java Welcome
    (d)   java Welcome.class

4. What does the Java compiler translate Java sourcecode into prior to execution on the Java Virtual Machine (JVM)?

    (a)   pseudocode
    (b)   assembly language
    (c)   machine language
    (d)   bytecodes

5. Which of the following is not a popular Java Integrated Development Environment (IDE) ?

    (a)   Visual Studio
    (b)   Eclipse
    (c)   NetBeans
    (d)   JBuilder

6. What do today's JVMs use when executing a Java program?

   (a) interpretation

   (b) just-in-time (JIT) compilation

   (c) Both a and b

   (d) None of the above

7. Which of the follwing is not an advantage of Java?

   (a) Java has a rich collection of existing class libraries.

   (b) Java has built-in support for multithreading.

   (c) Java is available for many different platforms.

   (d) Java programs are guaranteed to be portable.

8. What could be the problem if you attempt to run a Java program called ATMCaseStudy and you receive the error message, "`Exception in thread "main" java.lang.NoClassDefFoundError:  ATMCaseStudy`" ?

   (a) PATH environment variable is set incorrectly.

   (b) CLASSPATH environment variable is set incorrectly.

   (c) Java is is not installed.

   (d) The case-sensitive class name was typed incorrectly.

9. What is a widely used graphical representation scheme for modeling object-oriented systems?

   (a) Agile Software Development

   (b) Design Patterns

   (c) RSS

   (d) UML

10. What organization is responsible for promoting the standardization of object-oriented technologies by issuing guidelines and specifications?

   (a) Object Management Group

   (b) Hewlett-Packard

   (c) Oracle

   (d) Rational Software

Section 5. Answer the following questions:

1. List five signature companies of the web resurgence know as Web 2.0.

2. What open-source technologies does the acronym LAMP represent?

3. What does the following Java program do?

```
public class Welcome1
{
   public static void main(String[] args)
   {
      System.out.println("Welcome to Java Programming!");
   }
}
```


4. What are the three types of comments in Java and what symbols are used for each?

5. The Java language has a total of 50 keywords. Which four are present in the program listing of problem 3?